Research Articles

Digital Empowerment in Rural America: Internet-Capable Technology Use Among Somali Bantu Refugee Families in Western Pennsylvania[1]

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Abstract

This study examines how Somali Bantu refugee families living in rural Mercer County, Western Pennsylvania, use internet-capable technologies (ICTs) to empower everyday life in the rural United States. Drawing on Mäkinen's conceptualization of digital empowerment, this study frames empowerment as a process through which refugees use ICTs to cope *with challenges and gain* control *over daily life. Using an ethnographic case study approach, the study focuses on three multigenerational Somali Bantu families (n = 17) residing in a rural farming community between November 2025 and May 2026. Data were collected through semi-structured interviews and participant observation across homes, farms, and mosque gatherings, and were analyzed using thematic analysis. Findings suggest ICTs play a significant role in participants' religious, agricultural, community, and emotional empowerment. Participants used smartphones and social media platforms for online religious communication, halal farming coordination, agricultural learning, maintaining social ties, and coping with emotional stress and isolation. ICTs also supported community belonging, transnational communication, and rural adaptation. The study contributes to community informatics scholarship by demonstrating how a refugee-background farming community appropriates everyday technologies to sustain faith, livelihood, and community in a geographically isolated rural setting. Findings aim to inform policymakers, refugee resettlement agencies, and organizations serving refugee communities about the role ICTs play in rural adaptation and empowerment in the United States.*

Keywords: Somali Bantu refugees; digital empowerment; rural communities; ICTs; refugee adaptation

Introduction

Somali Bantu refugees represent one of the most historically marginalized minority populations from Somalia (Besteman, 2012). Most Somali Bantus historically lived in the fertile inter-riverine regions near the Jubba and Shabelle rivers in southern Somalia, where many worked as agriculturalists and maintained strong ties to farming and land-based livelihoods (Bjork, 2016; Bock et al., 2020; Syed et al., 2022). Despite their long presence in Somalia, Somali Bantus experienced widespread political, economic, and social exclusion and were often treated as second-class citizens (Bjork, 2016). Civil war, displacement, and violence against minority groups eventually contributed to the targeted resettlement of thousands of Somali Bantu refugees in the United States (Bjork, 2016). Today, Somali Bantu communities continue to navigate the

challenges associated with refugee resettlement, social integration, language barriers, employment, and adaptation to American institutions and everyday life.

This study is also situated within a fraught and rapidly shifting political climate for Somali communities in the United States. Since late 2025, the Trump administration has moved to terminate Temporary Protected Status for Somali nationals and has repeatedly singled out Somali communities, particularly in Minnesota, amid public allegations of large-scale fraud, actions that Somali community leaders and immigration advocates have characterized as racially targeted (NBC News, 2026a; NPR, 2025). This period has coincided with a marked increase in AI-generated and social-media disinformation about Somali Americans, including fabricated images and videos that have circulated widely online and further distorted public perception of Somali communities (NBC News, 2026b; Sahan Journal, 2025). This climate disproportionately implicates Somali Bantu communities, who remain largely invisible within broader public narratives about Somali Americans despite experiencing compounding forms of marginalization rooted in ethnicity, race, caste, and religion (Besteman, 2012; Bjork, 2016). We recognize this political-economic context as inseparable from the everyday technology use examined in this study: the same digital infrastructures that participants rely on for coping, connection, and empowerment also expose them to surveillance, misrepresentation, and heightened vulnerability.

Existing scholarship demonstrates that internet-capable technologies (ICTs) play an important role in refugee adaptation and settlement processes. Research has shown that refugees use smartphones, social media platforms, and online communication tools to access information, develop social capital, and cope with the emotional and practical challenges of migration (Almohamed & Vyas, 2019; Baldassar & Wilding, 2020; Hsiao & Dillahunt, 2018; Udwan et al., 2020). Other studies further suggest that ICTs can support refugee-background individuals in navigating employment systems, accessing services, maintaining kinship networks, and participating in social and civic life (Chaney et al., 2018; Gilhooly & Gilhooly, 2026). In rural communities, ICTs may become even more significant because geographic isolation, transportation limitations, and limited institutional access often increase dependence on digital communication and online service (Adkins & Sandy, 2020; Cuban, 2018)

This study draws on Mäkinen's (2006) conceptualization of digital empowerment, which defines empowerment as a process through which individuals and communities gain "increased control over life and coping skills" (p. 381). Rather than viewing refugees as passive recipients of aid, digital empowerment emphasizes agency, participation, adaptation, and the ability to manage everyday life through communication technologies (Mäkinen, 2006). Prior refugee ICT scholarship similarly demonstrates that digital technologies can help refugee-background individuals maintain important emotional and social support systems while adapting to new environments (Gilhooly & Gilhooly, 2026). As Baldassar and Wilding (2020) explain, digital communication also enables migrants and refugees to sustain transnational relationships, cultural identity, and emotional connection across geographic distance.

Rural refugee communities often face additional challenges associated with geographic isolation, limited transportation, fewer social services, and restricted institutional resources. These conditions can increase reliance on ICTs for communication, information access, social support, and everyday adaptation. In western Pennsylvania, Somali Bantu-led farming initiatives

such as Mwanakuche Farm have emerged as important community spaces centered on cultural preservation, self-sufficiency, community support, and agricultural engagement (The Pittsburgh Foundation, 2022). These farming environments also reflect broader efforts among Somali Bantu communities to maintain cultural traditions while adapting to rural life in the United States.

Although scholarship on refugees and ICTs continues to grow, limited research has examined how refugee-background communities use ICTs within rural agricultural settings in the United States, especially among minority groups such as Somali Bantu communities, whose historical relationships to agriculture, land, and communal livelihoods remain central to identity and adaptation. To fill this gap, this study examines the role of ICTs in empowering the everyday rural experiences of Somali Bantu refugee families living in Mercer County, Pennsylvania. Using an ethnographic case study approach, the study focuses on three families residing in a rural farming community. This study is guided by the following research question: How are Somali Bantu refugee families in rural Mercer County, Pennsylvania, using ICTs to empower their everyday lives in the United States? In the following sections, the study reviews the relevant literature, describes the methods used for data collection and analysis, presents the major themes emerging from participants' experiences, and discusses the broader implications of ICT use and digital empowerment among refugee-background communities in rural United States.

Literature Review

ICTs and the Refugee Experience: From Connectivity to Agency

For refugee-background communities, internet-capable technologies (ICTs) are no longer supplementary conveniences. In this study, we use the term ICTs to refer specifically to internet-capable devices and platforms, such as smartphones, social media applications, and messaging platforms, rather than the broader traditional definition of Information and Communication Technologies. We adopt this narrower framing because internet connectivity constituted the shared technological infrastructure underlying the religious, agricultural, communal, and emotional practices examined in this study. Consistent with Mäkinen's (2006) emphasis on communication as central to digital empowerment, however, communication itself remains the primary analytic focus of our analysis throughout, rather than the devices that enable it. They have become constitutive elements of adaptation itself, woven into how displaced people find work, sustain families, practice faith, and decipher unfamiliar institutions. This claim, now broadly accepted within what Leurs and Smets (2018) call digital migration studies, took time to earn. Early scholarship in the field concentrated on transit, treating the smartphone as a navigational instrument, a document repository, and a lifeline during dangerous journeys (Gillespie et al., 2018; Latonero & Kift, 2018). Only more recently has sustained attention turned to what happens after arrival, when the same devices stop mediating passage and start mediating settlement.

The post-arrival literature is not monolithic, and its internal variety is instructive. One line of work examines information practices: refugees land in resettlement contexts thick with opaque bureaucracy, and digital tools become the primary means of locating services, verifying

information, and compensating for thin institutional brokerage (Díaz Andrade & Doolin, 2016; Lloyd et al., 2013). A second line foregrounds social capital, showing how ICTs help refugee-background individuals rebuild bonding ties within co-ethnic networks while cultivating bridging ties to employers and host-society institutions (Almohamed & Vyas, 2019; Hsiao & Dillahunt, 2018). A third follows technology into the intimate sphere of transnational family life. Research on digital kinning demonstrates that ordinary platforms carry extraordinary relational weight, sustaining care obligations, cultural identity, and emotional co-presence across continents, particularly for older family members whose social worlds would otherwise contract sharply after migration (Baldassar & Wilding, 2020; Marlowe & Bruns, 2021). The scholarship suggests that refugee ICT use is best understood not as a list of discrete functions but as an integrated repertoire through which displaced people manage the practical, relational, and emotional labor of starting over.

A more critical strand complicates any celebratory reading. The technologies that connect can also expose. Refugees encounter biometric registration systems, forensic phone searches in asylum procedures, and data infrastructures whose governance lies far beyond their control (Latonero & Kift, 2018; Madon & Schoemaker, 2021). Scholars have likewise warned that humanitarian talk of digital "empowerment" can shade into a neoliberal expectation that refugees become self-sufficient entrepreneurial subjects, responsible for their own integration while structural barriers go unaddressed (Easton-Calabria & Omata, 2018). These critiques do not negate the empowering potential of ICTs; they discipline the concept. Empowerment must be demonstrated in situated practice rather than inferred from access, and it must be understood as partial, uneven, and entangled with constraint. It is that situated, practice-based understanding of empowerment that the present study pursues.

Conceptualizing Digital Empowerment

Mäkinen's (2006) formulation of digital empowerment anchors this study theoretically. In her account, empowerment is neither a property of technology nor an outcome delivered by it, but a process through which individuals and communities gain "increased control over life and coping skills" (p. 381) by appropriating communication technologies on their own terms. Two features of the framework recommend it for refugee research. Its dual emphasis on coping and control captures both the defensive and the generative dimensions of technology use: how people manage stress, isolation, and disruption, and how they actively accumulate capacity, participate in community life, and shape their circumstances. And it treats users as agents rather than beneficiaries, an orientation consistent with the broader turn in migration scholarship away from deficit framings of refugees as passive recipients of aid and toward accounts that foreground resourcefulness and self-organization (Bock et al., 2020; Udwan et al., 2020).

Digital empowerment also sits in productive tension with its conceptual neighbors, and the differences matter. Udwan et al. (2020) develop digital resilience to describe how Syrian refugees in the Netherlands tactically deploy social media for social support, health management, and identity work; resilience, though, emphasizes endurance and recovery, whereas empowerment additionally names the accumulation of control. Social capital frameworks

illuminate the relational payoffs of connectivity but attend less closely to the intrapersonal and spiritual dimensions of coping that loom large in many refugee communities (Almohamed & Vyas, 2019). Digital kinning captures the maintenance of transnational bonds but was developed primarily around aging and distant care rather than the full breadth of everyday adaptation (Baldassar & Wilding, 2020). Mäkinen's framework accommodates all of these dynamics within a single processual account, which suits ethnographic work that follows technology use across the religious, economic, communal, and emotional registers of daily life. Its continuing purchase is confirmed by recent scholarship: examining Sgaw Karen families in the rural United States, Gilhooly and Gilhooly (2026) find that ICTs empower refugee households along these very dimensions, enabling families to navigate unfamiliar spaces while preserving language, faith, and kin ties.

Religion, Coping, and Mediated Faith

Religion occupies a curious position in the refugee ICT literature: central to the lives of many displaced communities, peripheral in much of the scholarship about them. Research on African and Muslim refugee populations consistently identifies religious practice as a primary coping resource, one that structures time, sustains hope, and supplies interpretive frameworks for suffering and displacement (Adedoyin et al., 2016; Shaw et al., 2019). Far less examined is how that coping becomes digitally mediated. The available evidence indicates that online sermons, scriptural recitation, prayer applications, and faith-based group messaging allow dispersed believers to participate in religious community despite physical distance from mosques, clergy, and co-religionists (Masood et al., 2022; Udwan et al., 2020). For Muslim refugees resettled far from established Islamic institutions, mediated religious practice is not a pale substitute for embodied worship. It is a genuine infrastructure of faith maintenance, and by extension of emotional stability. The present study extends this line of inquiry into a rural context where the nearest mosque, halal butcher, or religious teacher may be an hour's drive away, and where digital connection consequently carries much of the weight of religious life.

Rural Resettlement and the Geography of Digital Adaptation

Refugee resettlement in the United States has diversified well beyond traditional gateway cities, dispersing refugee-background families into small towns and rural counties where housing is affordable and agricultural or manufacturing work is available (Chaney et al., 2018). The predominantly urban ICT literature has only begun to register the consequences. Rural resettlement compounds the ordinary challenges of displacement with geographic isolation, thin service infrastructures, limited public transportation, and small co-ethnic populations (Adkins & Sandy, 2020; Gilhooly & Gilhooly, 2026). Broadband coverage and cellular reliability are themselves uneven across rural regions, layering a digital divide atop a spatial one (Alrawi, 2024). Under such conditions the stakes of ICT use intensify. Technologies that urban refugees might treat as one resource among many become, for rural families, the principal channel through which social connection, religious community, information, and institutional access flow.

Yet the rural literature, read closely, points to something beyond compensation. Studies of immigrant and refugee communities in the rural Midwest and South indicate that digital tools do not merely offset rural deficits; they enable distinctive forms of place-making, allowing newcomers to coordinate economic activity, organize community institutions, and knit dispersed households into functioning collectives (Adkins & Sandy, 2020; Chaney et al., 2018). Gilhooly and Gilhooly's (2026) account of Karen families remains one of the few sustained ethnographies of this dynamic in an American rural setting, and its findings invite extension to other refugee-background populations. Agriculture adds a further, largely unstudied layer. For communities whose identities are bound to farming, rural resettlement offers what urban placement forecloses: the resumption of land-based livelihoods. How digital technologies articulate with such agrarian re-emplacement, coordinating planting and slaughter, transmitting agricultural knowledge across generations and continents, and sustaining farm-centered community life, is a question the literature has barely posed.

Somali Bantu Displacement and Agrarian Continuity

The Somali Bantu case gives that question particular force. A historically enslaved and marginalized minority within Somalia, Somali Bantus endured generations of political exclusion and land dispossession before the civil war made them targets of concentrated violence (Besteman, 2012; Bjork, 2016). Their identity as a people is inseparable from cultivation. The inter-riverine farming communities of the Jubba and Shabelle valleys anchored a social world organized around agricultural labor, communal land, and village reciprocity (Besteman, 2012). Resettlement in the United States, beginning in the early 2000s, largely severed that connection, placing agrarian families in urban apartment complexes and low-wage service economies (Bjork, 2016; Chaney et al., 2018). Subsequent scholarship has traced the community's ongoing negotiations of identity, racialization, and belonging, and digital storytelling research suggests that mediated self-representation figures meaningfully in how Somali migrants narrate adaptation (Syed et al., 2022). What no study has yet examined is the conjunction now visible in western Pennsylvania: Somali Bantu families relocating from cities to rural counties, re-establishing farming livelihoods, and doing so with smartphones in hand. Community initiatives such as Mwanakuche Farm signal that agrarian return is underway (The Pittsburgh Foundation, 2022); how ICTs sustain that return remains unknown.

The literature reviewed here thus establishes four points on which this study builds: that ICTs are integral to refugee adaptation; that digital empowerment offers a processual framework attentive to both coping and control; that the religious and rural dimensions of refugee technology use remain underexamined; and that the Somali Bantu community's agrarian history makes it an unusually revealing case for studying digitally mediated rural resettlement. At the intersection of these bodies of work lies a clear gap: no study has examined how a refugee-background farming community uses ICTs to empower everyday life in the rural United States. The present study addresses that gap.

Methods

This article stems from the first author's ten-year relationship with Somali Bantu communities in western Pennsylvania through religious, agricultural, and community interactions associated with halal slaughtering practices and rural farming activities. Over the years, these long-term relationships provided familiarity with participants' everyday experiences, agricultural life, religious practices, and technology use within rural communities. Similar to prior ethnographic refugee studies, the long-term engagement with participants helped establish trust and facilitated more open discussions regarding daily life, adaptation, and communication technologies.

This ethnographic case study focuses on three multigenerational Somali Bantu refugee families (n = 17) living in rural Mercer County, Pennsylvania, between November 2025 and May 2026. Participants included grandparents, parents, and children residing in rural farming communities. Most participants originally arrived in the United States through refugee resettlement programs after periods of displacement and migration from Somalia and neighboring regions. Families were drawn to Mercer County due to agricultural opportunities, affordable rural housing, employment availability, and the presence of existing Somali Bantu social and religious networks.

Mercer County is a largely rural area in western Pennsylvania characterized by farming communities, geographic dispersion, and limited public transportation. Similar to other rural refugee communities in the United States, participants often relied heavily on internet-capable technologies (ICTs) to navigate everyday life, maintain communication, access information, coordinate agricultural activities, and sustain social and religious connections. Smartphones represented the primary digital devices used by participants, while WhatsApp, Facebook, YouTube, and Smart TVs were commonly used platforms and technologies within households. The WhatsApp and Facebook groups described by participants were typically closed groups, requiring an existing connection or invitation to join.

Data collection consisted of semi-structured interviews, participant observation, and visits to participants' homes, farms, and mosque gatherings. Due to the author's longstanding relationship with participants, many interviews developed into informal conversations regarding everyday rural life, farming activities, religion, technology use, and adaptation experiences. Interviews were audio recorded and later transcribed for analysis. Most interviews were conducted in English, although children and younger family members occasionally assisted parents and grandparents by translating or clarifying responses during interviews, particularly when discussing technology-related issues or detailed personal experiences. Additional demographic and participant information are provided in the Appendix. Similar to prior refugee ethnographic studies, pseudonyms were used to protect participant privacy and confidentiality.

This study received Institutional Review Board (IRB) approval prior to data collection. Data were analyzed using thematic analysis following Braun and Clarke's (2006) approach to identifying patterns, meanings, and recurring themes across qualitative data. Interview transcripts, observational notes, and field reflections totaled approximately 153 pages of single-spaced text. These materials were repeatedly reviewed and coded inductively to identify

recurring patterns related to ICT use and everyday rural experiences. The coding process began by identifying recurring words, practices, interactions, and meanings across participant interviews and observational notes. Initial codes included religion, farming practices, family communication, social belonging, emotional stress, isolation, transnational communication, agricultural learning, and online religious engagement. These preliminary codes were gradually grouped and refined through multiple rounds of coding and comparison across participant experiences. After reviewing and consolidating the emerging categories, four major themes were identified regarding how ICTs supported participants' religious, agricultural, community, and emotional empowerment. Particular attention was given to recurring patterns reflecting how ICTs helped participants cope with everyday challenges and gain greater control over daily life, consistent with Mäkinen's conceptualization of digital empowerment.

Findings

Religious Empowerment

Religion played a central role in participants' everyday rural lives and was closely connected to the ways they used ICTs in Mercer County, Pennsylvania. Participants regularly described smartphones, WhatsApp, Facebook, YouTube, Smart TVs, and prayer apps as important tools for maintaining Islamic practices, communicating with other Muslims, coordinating halal slaughtering activities, and accessing religious information. Due to the geographic isolation associated with rural life, participants often relied on digital communication to remain connected to broader Muslim and Somali Bantu communities outside western Pennsylvania. ICTs also provided participants opportunities to access Islamic sermons, Qur'an recitations, prayer reminders, religious discussions, and faith-based guidance that were otherwise less accessible within their rural environment. A 63-year-old Somali Bantu grandfather and retired farmer explained how digital media became part of his religious routine, often with assistance from younger family members:

> My children help me use the phone when I need to talk with people. I use WhatsApp voice messages with Somali people and Muslims in other places. At night, I watch Qur'an recitation or Islamic videos on the TV from YouTube. Here we are far from many Muslim people, but when I listen and talk with people, I still feel close to religion and the community. (interview excerpt, 2026)

This example illustrates how ICTs became integrated into everyday religious life even among older participants who depended partly on younger family members for digital assistance. Rather than functioning only as communication tools, ICTs helped participants maintain spiritual routines and sustain religious connection despite geographic isolation in rural Pennsylvania. Similar to findings in prior refugee studies emphasizing religion as an important coping mechanism during resettlement (Adedoyin et al., 2016; Masood et al., 2022; Shaw et al., 2019), participants in this study frequently relied on online religious spaces to maintain religious continuity and cultural identity.

Participants also used ICTs to coordinate halal slaughtering practices and communicate about religious gatherings within the local Somali Bantu community. A 52-year-old father working in halal farming described the importance of smartphones and WhatsApp for organizing religious and agricultural activities:

> Everybody uses the phone to tell each other when we slaughter goats or when somebody needs halal meat. We send messages to family and friends, and people come help each other. Sometimes people ask if the animal is ready, what day to come, or who can help. Without the phone, it is harder because people live far from each other. (interview excerpt, 2026)

This collective digital coordination reflects how ICTs supported both religious practices and broader community cooperation within rural Somali Bantu life. WhatsApp groups and smartphone communication allowed participants to maintain important cultural and religious traditions tied to halal food preparation and Islamic practices. In many cases, these digital interactions helped participants maintain religious practices and coordinate faith-related activities within rural Somali Bantu life.

Younger participants more frequently described prayer apps, YouTube, and social media as part of their religious routines. One 20-year-old college student explained:

> I use prayer apps for prayer times and reminders, especially when I am busy with school or work. Sometimes I watch Islamic speakers on YouTube because there are not many Somali people here. Online helps me learn more and stay connected to religion even when we are far away from bigger Muslim communities.(interview excerpt, 2026)

For younger Somali Bantu participants, ICTs provided opportunities to organize religious routines, access Islamic learning materials, and remain connected to Muslim communities beyond Mercer County. Prayer apps were especially important for participants balancing school, work, family responsibilities, and rural isolation. Participants often described online religious engagement as a way to maintain continuity between faith, identity, and everyday life in the United States. These findings suggest that ICTs played an important role in helping Somali Bantu refugee families maintain religious continuity, cultural belonging, and faith-based practices within the rural United States.

Agricultural Empowerment

Many participants connected farming to both their daily survival and their long-standing cultural background as Somali Bantu families. Living in rural Mercer County allowed several families to continue agricultural activities that reminded them of earlier farming experiences in Somalia and refugee camps. Within this setting, ICTs became useful tools for learning farming practices, communicating with other farmers, organizing agricultural work, and exchanging information about livestock and halal food preparation. Participants frequently discussed using digital technologies that rely on the internet mainly to access farming and agricultural information. A

43-year-old Somali Bantu agricultural worker described how digital communication became part of his everyday farming experiences:

> We use phones all the time during farming work. Sometimes people send videos about how to grow vegetables or take care of animals. Other times we use WhatsApp to ask questions or tell people when we need help at the farm. The phone helps us learn many things that we did not know before. (interview excerpt, 2026)

Several participants explained that online spaces became important sources of agricultural learning because farming conditions in rural Pennsylvania were unfamiliar compared to previous experiences in Somalia. Participants described searching online for information about seasonal planting, crop maintenance, livestock care, weather conditions, and farming equipment. One 20-year-old college student who regularly helped family members with farm activities explained how Facebook pages became useful learning spaces:

> My parents follow farming pages on Facebook because people post information about vegetables, animals, weather, and farming ideas. Sometimes we also see other Somali farmers posting pictures or explaining things they do on farms in America. It helps my family understand farming better here. (interview excerpt, 2026)

Participants often described Facebook pages as community-oriented spaces where people shared farming advice, agricultural experiences, and local information connected to livestock and crops. Younger family members frequently helped older relatives navigate these online spaces, especially when translation or reading assistance was needed. Further, communication technologies also helped participants organize transportation, labor, and coordination across geographically dispersed rural areas. A 52-year-old father involved in halal farming mentioned, “Without phones it becomes difficult because everybody lives far from each other here. We call people when animals arrive, when somebody needs help, or when we need transportation for farming work.” (interview excerpt, 2026)

These forms of digital communication improved coordination among Somali Bantu families involved in farming and halal food preparation. Participants frequently relied on digital communication to solve everyday agricultural problems, exchange practical farming knowledge, and coordinate labor across rural areas. Several participants also described ICTs as useful tools for adapting to unfamiliar farming conditions, weather patterns, and agricultural systems in Pennsylvania. In many cases, online communication helped participants access farming information despite rural distance and limited local agricultural resources. ICTs therefore helped participants continue agricultural traditions while adapting to farming life in rural United States.

Community Empowerment

Participants frequently described ICTs as important tools for maintaining social relationships and strengthening community connection within rural Pennsylvania. Because many Somali Bantu

families lived in geographically dispersed rural areas, digital communication often became necessary for staying connected with relatives, friends, neighbors, and other Somali community members. Participants explained that communication technologies helped families remain connected despite transportation limitations and physical distance. A 37-year-old Somali Bantu mother explained that smartphones helped community members remain in contact throughout the week, "We call each other every day. Sometimes we check if somebody needs help, food, or transportation. The phone helps Somali families stay connected here." (interview excerpt, 2026)

Participants often described digital communication as part of their everyday social routines. Voice messages, video calls, shared photos, and community announcements allowed families to remain informed about birthdays, illnesses, transportation needs, and other daily matters. Several participants explained that communication technologies became especially important during busy work periods, severe weather conditions, or moments when traveling across rural areas became difficult. Several participants also described social media as helping them maintain relationships with Somali Bantu community members outside Mercer County. A 21-year-old factory worker explained:

> I talk with Somali friends in other states on Facebook and WhatsApp because there are not many Somali people here. Sometimes we talk about work, sports, Somali culture, or everyday life. It helps us continue communicating with each other even when we live far away. (interview excerpt, 2026)

Participants further described digital communication as important for maintaining Somali Bantu identity across geographically dispersed rural areas. Through online communication, photos, videos, and everyday conversations, participants remained connected to Somali language, cultural traditions, and community relationships. One participant explained that "when we talk in Somali online, it reminds us we are still one community here."

Some participants also described the importance of staying informed about community activities and family updates through their phones and internet connection. A 40-year-old participant explained that "if your phone is off for one day, you miss many things happening in the community." Participants often described communication technologies as important tools for keeping up with family visits, transportation arrangements, community announcements, and everyday social interactions occurring across different rural locations. One 43-year-old father described more broadly how communication technologies shaped everyday community relationships in rural Pennsylvania:

> Before, when somebody needed help, people had to travel or wait until they saw each other. Now everybody uses phones to stay connected. We use phones for family, community meetings, and helping each other. If somebody is sick or needs transportation, people know quickly. Even older people now depend on younger family members to help them use phones sometimes. Without communication technology, everyday communication and coordination would become much harder for Somali families living across rural areas. (interview excerpt, 2026)

This type of digital communication strengthened community cooperation among Somali Bantu families living in rural areas. Participants repeatedly described ICTs as helping them maintain relationships, exchange information, organize community activities, and respond more quickly to everyday needs within the community. In many cases, communication technologies also helped participants maintain regular interaction with relatives, neighbors, and Somali community members across geographically dispersed rural areas. Virtual coordination frequently extended into in-person community life, most notably in relation to worship activities such as Friday prayers, monthly gatherings organized through the Islamic Society Center, and communal observances of Eid and Ramadan, which participants coordinated in part through WhatsApp and Facebook messaging. Participants also described using these platforms to coordinate work exchange, such as notifying others when help was needed at a farm or worksite.

Emotional Empowerment

In many instances, participants reflected on the role ICTs played in helping them manage everyday emotional challenges associated with rural life, migration, and family separation. Several participants explained that smartphones, Smart TVs, YouTube, Facebook, and WhatsApp helped them cope with boredom, homesickness, loneliness, and stress while adjusting to life in rural Pennsylvania. Digital communication and online entertainment often became part of participants' daily routines, especially during periods of isolation, limited mobility, or long work hours. These experiences further reinforce scholarship emphasizing the role of ICTs in helping individuals manage isolation and everyday emotional challenges within rural settings (Alrawi, 2024). A 36-year-old Somali Bantu mother explained how communication technologies helped her remain emotionally connected to relatives living outside the United States:

> Sometimes I feel stressed because family members are far away in Somalia and other places. When I talk with them on WhatsApp or see videos from family, I feel better. Even hearing Somali language on the phone helps me relax. (interview excerpt, 2026)

Many participants described communication with relatives abroad as important to their emotional well-being, particularly because several families had experienced displacement, migration, and long periods of separation. Video calls, voice messages, and shared photos often helped participants maintain emotional connection with relatives living outside Pennsylvania and outside the United States. Several younger participants also described online entertainment as helping them manage boredom and isolation in rural areas. A 20-year-old college student mentioned, "there are not many things to do here sometimes, especially during winter. I watch YouTube, Somali videos, sports, or funny videos when I feel bored or stressed after school or work." (interview excerpt, 2026)

Participants often described YouTube and Smart TVs as important sources of entertainment within the household. Some participants explained that watching Somali-language videos, cultural programs, or everyday online content helped create familiarity within the home environment. Others described listening to Somali music or watching videos together with family members during evenings after work and farming activities. One 58-year-old

grandmother described how Smart TVs became part of her everyday emotional routine, “At night we watch Somali programs or videos together in the house. Sometimes we laugh, sometimes we talk about old memories, and it helps pass time here. Without TV and phones, evenings would feel very long.” (interview excerpt, 2026)

Participants also indicated that communication technologies became especially important during difficult moments, including illness, stressful work conditions, severe weather, or periods when travel across rural areas became difficult. In several interviews, participants described phones and online communication as tools that helped families remain emotionally reassured about the well-being of relatives, children, and community members living in different locations. These findings suggest that ICTs played an important role in helping Somali Bantu participants manage emotional challenges associated with migration and rural adaptation. Communication technologies, online entertainment, and transnational communication provided participants opportunities for emotional reassurance, familiarity, relaxation, and everyday emotional support while living in rural United States.

Figure 1 summarizes the four findings and illustrates how ICT use supported participants’ religious, agricultural, community, and emotional empowerment through broader processes of coping and control in rural adaptation.

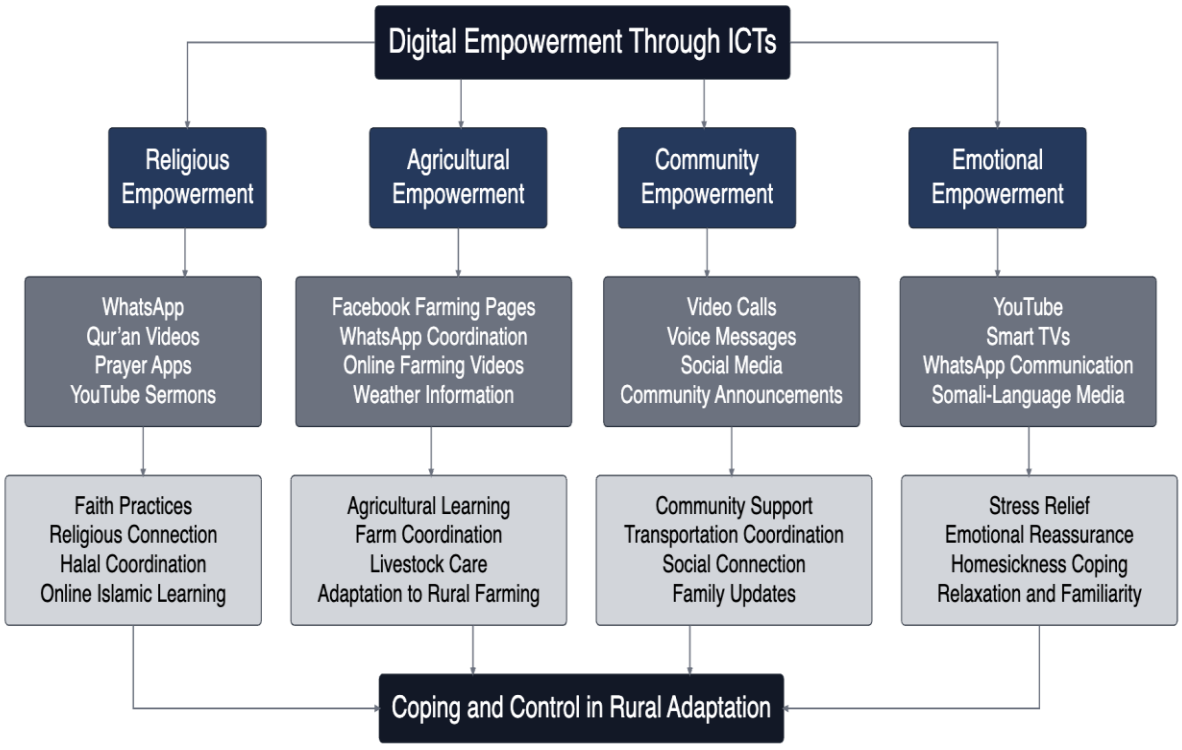


Figure 1: Digital Empowerment Through ICT Use Among Somali Bantu Refugee Families

Discussion

Life in rural Mercer County shaped the ways Somali Bantu participants relied on ICTs in their everyday routines and social relationships. For many participants, communication technologies became part of daily life not simply because of convenience, but because rural distance, transportation limitations, and separation from larger Somali communities made digital communication especially important. Phones, social media platforms, online videos, and internet-based communication often helped participants remain connected to relatives, maintain cultural familiarity, exchange information, and navigate everyday responsibilities across work, family, and community life. Within this rural setting, ICTs became closely connected to how participants adapted to everyday life in the United States while continuing to maintain important social and cultural ties. Several participants also expressed awareness of and concern about increased immigration enforcement activity, including surveillance associated with U.S. Immigration and Customs Enforcement (ICE), describing a resulting wariness around drawing attention to themselves. This chilling effect echoes broader reports of heightened fear among immigrant and refugee communities amid the enforcement and deportation activity.

The findings also speak directly to the three literature review categories that framed this study. The prominence of prayer apps, Qur'an recitation, WhatsApp voice messages with imams, and digitally coordinated halal slaughtering documented in the Religious Empowerment findings extends prior work on religious coping among displaced Muslim populations by showing how digitally mediated faith practices function as a genuine infrastructure of religious life, rather than a diminished substitute for it, when the nearest mosque or halal butcher is an hour's drive away (Adedoyin et al., 2016; Masood et al., 2022; Shaw et al., 2019). The Agricultural and Community Empowerment findings similarly extend the literature on rural resettlement and the geography of digital adaptation. Consistent with prior work showing that rural refugee communities depend on ICTs more heavily than their urban counterparts because digital tools become the principal, rather than supplementary, channel for information and connection (Adkins & Sandy, 2020; Alrawi, 2024; Gilhooly & Gilhooly, 2026), participants in this study relied on Facebook farming pages, WhatsApp coordination, and phone based transportation arrangements as central rather than peripheral tools for navigating rural agricultural and social life. Finally, the Agricultural Empowerment findings speak directly to the literature on Somali Bantu displacement and agrarian continuity. Where prior scholarship established that resettlement in the United States severed Somali Bantu families' historical ties to land based livelihoods (Besteman, 2012; Bjork, 2016), the present findings show that ICTs are actively enabling the resumption of those livelihoods, as participants used digital platforms to learn unfamiliar farming techniques, coordinate halal food preparation, and sustain the very agrarian identity that displacement had threatened to sever, extending Syed et al.'s (2022) account of digital storytelling as a vehicle for adaptation into the more material domain of agricultural knowledge transfer.

The findings also show that technology use among Somali Bantu participants extended beyond basic communication or entertainment. Internet-based communication frequently became intertwined with farming activities, community coordination, emotional support, and maintaining Somali cultural practices within the household. In many cases, younger family members also played an important role in helping older relatives navigate digital platforms,

translating information, managing applications, or accessing online content. These everyday interactions demonstrate how ICT use often operated collectively within families and communities rather than only at the individual level.

The community's reliance on ICTs to coordinate halal slaughtering and other food-related activities also reflects a layered form of marginalization worth situating explicitly. Halal food access for Somali Bantu families in rural Mercer County depends heavily on informal digital coordination in part because the surrounding rural agri-food system does not reliably accommodate their religious and cultural dietary requirements: nearby grocery stores and supply chains are oriented toward conventional, non-halal products, and the formal halal infrastructure common in larger metropolitan areas is largely absent in this rural setting. Broader scholarship on food identity notes that U.S. food law and the agri-food system more broadly tend to prioritize the needs of the mainstream food industry over those of eaters whose foodways depart from dominant norms, often to the particular detriment of racial, ethnic, and religious minorities (Cohen, 2024). Within this context, participants' digital coordination of halal slaughtering functions simultaneously as a religious practice, a community-building activity, and a form of infrastructural self-provisioning that compensates for an agri-food system that may or may not be inclusive of ethnocultural minority needs. This layered marginalization, at the intersection of food, religion, and rurality, sits within the same political-economic context discussed in the Introduction, in which Somali Bantu families' technology use for coping and empowerment coexists with broader vulnerability tied to their race, religion, and immigration status.

Conclusion

This study also brings attention to refugee-background communities living in smaller rural agricultural areas that are often less visible within migration and communication scholarship. While discussions about refugees and technology frequently focus on urban settings, participants in this study described very different experiences shaped by rural isolation, dispersed settlement patterns, and agricultural work. Future research may continue examining how refugee-background communities across different rural regions use communication technologies to navigate everyday life, maintain social connections, and adapt to changing rural environments in the United States.

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Appendix

Table 1: Participant Demographics

Family	**Participant**	**Year of Birth**	**Gender**	**Role in Family**	**Country/Region of Origin**	**Occupation/Role**	**Main Digital Devices/Platforms**
Family 1	Participant 1	1962	Male	Grandfather	Somalia	Retired farmer	Smartphone, WhatsApp, Smart TV, YouTube
	Participant 2	1963	Female	Grandmother	Somalia	Homemaker	Smart TV, WhatsApp
	Participant 3	1982	Male	Father	Somalia	Agricultural worker	Smartphone, Facebook, YouTube, WhatsApp
	Participant 4	1988	Female	Mother	Somalia	Homemaker	Smartphone, WhatsApp
	Participant 5	2006	Female	Daughter	United States	College student	Smartphone, YouTube, WhatsApp, prayer app
	Participant 6	2010	Male	Son	United States	High school student	Smartphone, Facebook
Family 2	Participant 7	1973	Male	Father	Somalia	Halal farm worker	Smartphone, WhatsApp
	Participant 8	1981	Female	Mother	Somalia	Homemaker	Smartphone, Smart TV

Family	Participant	Year of Birth	Gender	Role in Family	Country/Region of Origin	Occupation/Role	Main Digital Devices/Platforms
	Participant 9	2004	Male	Son	United States	Factory worker	Smartphone, Facebook, WhatsApp
	Participant 10	2007	Female	Daughter	United States	Student	Smartphone, YouTube
	Participant 11	2011	Male	Son	United States	Student	Smartphone
Family 3	Participant 12	1960	Male	Grandfather	Somalia	Retired farmer	Smartphone
	Participant 13	1968	Female	Grandmother	Somalia	Homemaker	Smart TV
	Participant 14	1986	Male	Father	Somalia	Agricultural worker	Smartphone, WhatsApp, Facebook
	Participant 15	1989	Female	Mother	Somalia	Homemaker	Smartphone, WhatsApp
	Participant 16	2007	Female	Daughter	United States	College student	Smartphone, YouTube
	Participant 17	2009	Male	Son	United States	High school student	Smartphone, Facebook